REMARKS

Claims 16-18 and 24 are pending in the application. Claim 24 is amended as recited above. The amendment to Claim 24 finds support in the specification, for example, at page 3, lines 3-5; page 10, line 15; page 11, lines 29-39, page 12, lines 1-6, page 29, lines 25-39, page 30, lines 1-24, and elsewhere. No new matter is added by way of the amendments.

The Examiner has required amendment of the specification to disclose SEQ ID numbers for the peptide sequences disclosed in Figure 13. The appended Sequence Listing and the remarks below comply with this requirement. No new matter is added by way of the amendments to the sequence listing.

The Examiner has required correction of the specification to include indication of trademarks where trademarked names are recited. Applicants respectfully submit that with the present amendments to the specification such corrections have been made. No new matter is added by way of the amendments to the specification.

The Examiner has not accepted the claim for benefit of the earlier filing date of a chain of parent applications which extend into the past to the filing date of U.S. Provisional Application Serial No. 60/104,589 filed February 7, 1997. As discussed below, applicants believe that the application is entitled to the benefit of all the earlier filing dates of the parent applications and so should be accorded a priority date of February 7, 1997.

Claims 16-18 and 24 stand rejected under 35 U.S.C. §112, first paragraph as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Claim 24 stands rejected under 35 U.S.C. §102 as allegedly being anticipated by Spencer et al. (*J. Cell Biol.* **138(4)**:845-860 (1997), hereafter "Spencer") as evidenced by Becker et al. (*FEBS Lett.* **441(1)**:141-147 (1998) hereafter "Becker").

Claims 16-18 and 24 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over Spencer in view of Ackerman (*Human Cell* **1**:46-53 (1988), hereafter "Ackerman") and Nakamura et al. (*Cell Struct. Funct.* **9(2)**:167-169 (1984) hereafter "Nakamura").

Claims 16-18 and 24 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over Database SPTREMBL 23 Accession NO. P978144 (01 May 1997) in view of Ackerman and Nakamura.

Applicants respectfully traverse the rejections to the claims for at least the reasons discussed below.

The Claims for the Benefit of an Earlier Priority Date

The Examiner has not accepted the claim for benefit of the earlier filing date of PCT/US98/01774 filed January 30, 1998, which was given the benefit of the earlier filing date of U.S. Application Serial No. 08/938,830 filed September 29, 1997 (now U.S. Patent 6,040,437), which was given the benefit of the earlier filing date of U.S. Provisional Application Serial No. 60/104,589 filed February 7, 1997. As discussed below, Applicants respectfully submit that the present application should be accorded the benefit of all the earlier filing dates of the parent applications.

Referring to PCT/US98/01774, U.S. Application Serial No. 08/938,830, and U.S. Provisional Application Serial No. 60/104,589, the Examiner states that "the specifications of these documents to which the Applicants have claimed benefit do not disclose a proper and sufficient antecedence to support the limitation presently recited in Claim 24, which requires the antibody to bind the polypeptide at a site not including a phosphorylated tyrosine of the polypeptide." Applicants respectfully disagree with the characterization that the antibodies claimed in the version of Claim 24 as described in the quoted section are not described by the parent documents. However, this point is moot, since, with the present amendment, no claim recites "at a site not including a phosphorylated tyrosine of said polypeptide."

The specifications of PCT/US98/01774, U.S. Application Serial No. 08/938,830, and U.S. Provisional Application Serial No. 60/104,589 do indeed support the subject matter claimed in the present application. For example, the specifications recite the PSTPIP polypeptide (SEQ ID NO:1) at, for example, page 2, lines 27-28 (present application, which has the specification of its parent PCT application PCT/US/98/01774); page 4, lines 10-11 (U.S. Application Serial No. 08/938,830); and page 4, line 30 and page 5, lines 1-3 (application originally filed as non-provisional U.S. Application Serial No. 08/798,419 and later converted to a U.S. Provisional Application Serial No. 60/104,589).

The specifications also recite antibodies to the PSTPIP polypeptide at, for example, page 3, lines 3-5 (present application, which has the specification of its parent PCT application PCT/US/98/01774); page 5, lines 1-3 (U.S. Application Serial No. 08/938,830); and page 5, lines 25-29 (U.S. Provisional Application Serial No. 60/104,589). These specifications also note that antibodies "exhibit binding specificity to a specific antigen" (page 10, line 15, present application; page 17, line 26, U.S. Application Serial No. 08/938,830; page 17, lines 24-25 U.S. Provisional Application Serial No. 60/104,589). Other disclosure related to the specificity of antibodies may be found, for example, at page 11, lines 29-39 and page 12, lines 1-6 (present application); at page 20, lines 6-25 (U.S. Application Serial No. 08/938,830); and at page 20, lines 25-30 and page 21, lines 1-24 (U.S. Provisional Application Serial No. 60/104,589). Thus, support for the claimed invention is found in the specifications from which benefit is claimed as well as in the present specification.

Accordingly, since the stated basis for the denial of the priority claim no longer applies, and since the specifications of the parent applications support the subject matter of the present application, Applicants respectfully submit that the present application is entitled to the benefit of all the earlier filing dates of the parent applications and so should be accorded a priority date of February 7, 1997.

The Sequ nc Listing

The Examiner has required that the amino acid sequences presented in Figure 13 be given SEQ ID NOs and be included in the sequence listing of the present application. The peptide sequences disclosed in Figure 13 as originally filed have been added to the Sequence Listings in this application, as indicated above. A sequence listing in computer-readable form including these sequences from Figure 13 accompanies this Amendment, as does a copy of the Notice to Comply indicating the requirement to include these sequences in the sequence listing.

The Amendments to the Specification to Denote Trademarks

As required by the Examiner, the specification has been amended to include the symbol "™" where indicated.

The Claim Rejections under 35 USC § 112, first paragraph

Claims 16-18 and 24 stand rejected under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The Examiner referred to the phrase "at a site not including a phosphorylated tyrosine of said polypeptide" and stated "there does not appear to [be] a proper and sufficient antecedent basis in the originally filed specification to support the recitation of this limitation in the present claims." The Examiner also states that "Because claim 24 recites '[a]n antibody that binds the [...] polypeptide of SEQ ID NO: 1 at a site not including a phosphorylated tyrosine" it appears that the claim is directed to a subgenus of antibodies, which was not described by the original disclosure ..." Applicants respectfully disagree with the characterization that the antibodies claimed as described in the quoted section are not described by the original disclosure. However, this point is moot, since, with the present amendment, no claim recites "at a site not including a

phosphorylated tyrosine of said polypeptide."

Claims 16-18 and 24 are directed to antibodies "derivable from an antibody-producing cell from an animal that has been immunized with a PST phosphatase interacting protein (PSTPIP) polypeptide of SEQ ID NO:1 that specifically binds to an epitope within SEQ ID NO:1 of the PSTPIP-polypeptide of SEQ ID NO:1." Thus, the claimed subject matter includes antibodies derivable from cells from an animal challenged with the full-length polypeptide SEQ ID NO:1. As would be understood by one of ordinary skill in the art, such antibodies are directed against epitopes on that novel polypeptide, and bind specifically to those epitopes.

Moreover, Applicants submit that the specification describes the claimed invention in full, clear, concise and exact terms which enable any person skilled in the art to make and use the invention. The specification teaches methods for obtaining polyclonal and monoclonal antibodies (see, *e.g.,* page 29 line 25 to page 34, line 29), which antibodies specifically bind to epitopes of the PSTPIP polypeptide (see, *e.g.,* pages cited above). As discussed previously, applicants claim antibodies which are capable of specifically binding to an epitope within the full length PSTPIP polypeptide. For example, the specification notes that "antibodies exhibit binding specificity to a specific antigen" (page 10, lines 15-16), that "monoclonal antibodies are highly specific, being directed against a single antigenic site" (page 11, lines 35-36), and that "antibodies specifically binding PSTPIP can be used, for example, to identify rapidly dividing cells which, in turn, are used to image tumors comprised of such rapidly growing cells" (page 35, lines 23-24). Thus, for at least this reason as well, an appropriate basis for the rejection is lacking.

Applicants believe that one of ordinary skill in the art would recognize that an antibody derivable from an antibody-producing cell from an animal that has been immunized with a PST phosphatase interacting protein (PSTPIP) polypeptide of SEQ ID NO:1, that is required to bind specifically to an epitope within SEQ ID NO:1 of thePSTPIP polypeptide of SEQ ID NO:1 (as required by the present claims), would not

be expected to exhibit significant cross-reactivity with other polypeptides or epitopes. As stated in Biochemistry by Stryer (Third Edition, 1988) at page 890, lines 5-6 "Each antibody has specific affinity for the foreign material that stimulated its synthesis." Furthermore, Stryer states that the "combining sites of antibodies (*i.e.,* their antigen binding sites) resemble the active sites of enzymes" (*Ibid.*, page 894, lines 11-12) and that "the binding forces of hapten-antibody complexes are like those in enzyme-substrate complexes" (*Ibid.*, page 894, lines 23-24). Thus, one of ordinary skill in the art would recognize that the claimed antibodies would be highly specific for the (PSTPIP) polypeptide, would bind specifically to an epitope of that polypeptide and would not be expected to exhibit significant cross-reactivity with other polypeptides or epitopes under similar conditions.

Accordingly, for at least these reasons, Applicants submit that the rejection to Claims 16-18 and 24 under 35 U.S.C. §112, first paragraph, is overcome.

The Claim Rejection under 35 U.S.C. §102

Claim 24 stands rejected under 35 U.S.C. §102 as allegedly being anticipated by Spencer et al. (*J. Cell Biol.* **138(4)**:845-860 (August 25, 1997), hereafter "Spencer") as evidenced by Becker et al. (*FEBS Lett.* 441(1):141-147 (1998). Spencer et al. is presented by the Examiner as discussing an anti-PSTPIP polyclonal antibody. Becker et al. is presented as suggesting that co-expression of an exogenous tyrosine kinase is necessary to produce a soluble recombinant protein in *E. coli* that has a phosphorylated tyrosine. Applicants respectfully traverse this rejection.

The Spencer reference cited against Claim 24 is dated August 25, 1997, which, as discussed above, is after the priority date of February 7, 1997 of the instant application. Thus, Spencer is not a proper reference against the present application. In addition, Becker, dated in 1998 which is also after the priority date of the instant application, is likewise not a proper reference. Accordingly, for this reason at least, applicants respectfully submit that the rejection under 35 U.S.C. 102 is overcome.

Applicants also note that Claim 24 as amended does not recite an antibody the binds to an epitope "at a site not including a phosphorylated tyrosine of said polypeptide." Thus, the rejection under 35 U.S.C. §102 suggesting that the GST fusion protein *necessarily* "produces an antibody that binds the polypeptide at a site not including a phosphorylated tyrosine" is moot. Accordingly, for this reason as well, the rejection under 35 U.S.C. §102 is overcome.

The Claim Rejections under 35 U.S.C. §103(a) over Spencer, Ackerman and Nakamura

Claims 16-18 and 24 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over Spencer et al. (*J. Cell Biol.* **138(4)**:845-860 (1997), hereafter "Spencer") in view of Ackerman (*Human Cell* **1**:46-53 (1988), hereafter "Ackerman") and Nakamura et al. (*Cell Struct. Funct.* **9(2)**:167-169 (1984) hereafter "Nakamura").

Applicants respectfully traverse this rejection.

The Spencer reference is dated August 25, 1997, which, as discussed above, is after the priority date of February 7, 1997 of the instant application. Thus, the Spencer reference is not a proper reference against the present claims.

Ackerman is presented to suggest that generating monoclonal antibodies is routine and that monoclonal antibodies provide numerous advantages. Nakamura is presented as suggesting that a monoclonal antibody has more than one utility, including the detection, quantification, and localization of the protein to which the antibody binds. However, the combination of Ackerman and Nakamura fail to provide all the elements of the present claims. For example, Ackerman and Nakamura fail to provide the element that the antibody specifically binds to an epitope within SEQ ID NO: 1 of the polypeptide of SQ ID NO: 1, and Ackerman and Nakamura fail to provide the element that the antibody be derivable from an antibody-producing cell from an animal that has been immunized with a PST phosphatase interacting protein (PSTPIP) polypeptide of SEQ ID NO:1. In addition, Ackerman and Nakamura fail to provide any suggestion or

motivation to provide these elements of the present claims, not do they provide any reasonable expectation of success for such a combination.

Accordingly, for these reasons at least, applicants respectfully submit that the rejection under 35 U.S.C. §103(a) over Spencer, Ackerman and Nakamura is overcome.

The Claim Rejections under 35 U.S.C. §103(a) over Database SPTREMBL, Ackerman and Nakamura

Claims 16-18 and 24 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over Database SPTREMBL 23 Accession NO. P978144 (01 May 1997) in view of Ackerman and Nakamura.

The SPTREMBL reference cited against claim 24 is dated May 1, 1997, which, as discussed above, is after the priority date of February 7, 1997 of the instant application. For at least this reason, SPTREMBL is not a proper reference against the present application.

Ackerman is presented as teaching that monoclonal antibodies are widely used, and Nakamura is presented as suggesting that monoclonal antibodies may be useful in characterizing the expression of a polypeptide and in quantifying and purifying the polypeptide to which the antibody binds. However, Ackerman and Nakamura together provide no suggestion or motivation to provide an antibody that specifically binds to an epitope within SEQ ID NO: 1 of the polypeptide of SQ ID NO: 1, which is one of the elements required by the present claims. Ackerman and Nakamura also fail to provide the element that the antibody be derivable from an antibody-producing cell from an animal that has been immunized with a PST phosphatase interacting protein (PSTPIP) polypeptide of SEQ ID NO:1. In addition, Ackerman and Nakamura fail to provide any suggestion or motivation to provide these elements of the present claims, not do they provide any reasonable expectation of success for such a combination.

Accordingly, for these reasons at least, the rejection under 35 U.S.C. §103(a)

over SPTREMBL, Ackerman and Nakamura is overcome.

CONCLUSION

For the reasons presented above, Applicants respectfully submit that all pending claims are in condition for allowance, and an early action to that effect is respectfully solicited. If any issues remain or require further clarification, the Examiner is respectfully requested to call Applicants' counsel at the number listed below in order to resolve such issues promptly.

The Commissioner is authorized to charge the fee for a one-month extension of time and for any other fees due, including any fees for additional extension of time, or credit overpayment to Deposit Account No. **08-1641**, referencing attorney's docket no. **39766-0061 CP2**.

Respectfully submitted,

Dated: December 18, 2003

By: _____
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